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basic imagery interpretation report

Ladong Cruise Missile Depot (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES

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CHINA

Secret

WNINTEL

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Ladong Prob Cruise Missile Depot South					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	24-44-05N 109-31-43E				

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MAP REFERENCE

SAC. USATC, Series 200, Sheet 0497-23, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
	NA

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ABSTRACT

1. (S/D) This report presents an imagery-derived analysis of activity observed at Ladong Cruise Missile (CM) Depot and the recently identified Ladong Probable CM Depot South in Guanzxi Province, China. The report covers the period February 1969 to August 1979 and is the third in a series of reports on CM depots in China.

2. (S/D) The original depot at Ladong is a multiple-purpose fleet support installation. Its major function is STYX CM support and storage; its secondary function is munitions storage. Activity at the depot since 1969 includes the completion of the installation as a CM depot and a 30 percent increase in covered storage area. Also since 1969, STYX missile crates were observed for the first time.

3. (S/D) A newly identified depot is under construction 2.5 nm southeast of the original depot which it will probably eventually replace.

4. (U) This report contains a location map, seven annotated photographs, a chart, a table of mensural data, an appendix, and chronological data.

INTRODUCTION

5. (S/D) The Ladong CM Depot (Figures 1 and 2), the only CM depot in the South Sea Fleet (SSF) area, is situated in heavy karst terrain approximately 200 nautical miles (nm) northwest of the South China coast and approximately 25 nm north of Liuzhou City. The depot (Figure 3) consists of six areas: CM handling and storage; CM fuel handling; munitions handling and storage (main); munitions handling and storage (secondary); administration and support; and, rail-to-road transfer point (RTP). Security is moderate and entry is controlled primarily by terrain and checkpoints on some roads.

6. (S/D) The Ladong CM Depot was constructed to support CM units during the initial stages of STYX missile deployment to the SSF. The depot was operational in 1972 at about the same time the North Sea Fleet CM Depot became operational and only two years after the East Sea Fleet CM Storage Area (depot) was established. Both North and East Sea Fleets have modern, partially underground, fully operational depots to support STYX units.

7. (S/D) A new depot under construction at Ladong will probably eventually replace the present aboveground facility with a well-designed, partially underground, elaborately constructed depot for handling STYX missiles and other munitions. When operational, the new Ladong depot may not only supplant the present depot but will also provide a more convenient, modern, and protected environment for the handling and maintenance of CMs. Ladong is the third depot that the Chinese have either replaced or rebuilt since 1972, and the construction parallels the other CM construction projects.[1,2] The resources dedicated to the construction of the new Ladong CM Depot are evidence of China's intention to continue to rely on the STYX CM for naval defense.

BASIC DESCRIPTION

Original Cruise Missile Depot

8. (S/D) The CM depot consists of 62 buildings (including two at the RTP 2 nm to the southeast) and five adits in a large valley surrounded by karst hills (Figures 2 and 3 and Table 1).

9. (S/D) The CM portion of the facility contains three STYX storage and maintenance buildings, one propellant storage building, a separately walled oxidizer storage building, two munitions support buildings, one munitions storage building, and several general support buildings. STYX crates have been seen routinely near the STYX storage and maintenance buildings and adjacent to the munitions storage building.

10. (S/D) The munitions handling and storage area is divided into two parts. The main area contains ten munitions storage buildings, two munitions support buildings, three general support buildings, and five general storage/support adits. The secondary area contains three munitions storage buildings and two general support buildings. This area may have a specialized function because of its relative isolation from the remainder of the facility.

11. (S/D) The administration and support area consists of 13 barracks, one barracks/administration building, two messhalls, one guardhouse, six support buildings, and two livestock support buildings. This area provides personnel, administrative, and vehicle support for the depot.

12. (S/D) The RTP (Figure 3 and Table 1) is 2 nm southeast of the depot. It consists of a double-track siding with a turnaround wye, a transshipment building, and a warehouse. STYX rail transporter flatcars have occasionally been seen here.

New Cruise Missile Depot

13. (S/D) A new CM depot was observed under construction adjacent to the RTP (Figure 4). The new depot is being constructed in heavy karst terrain adjacent to a probable storage facility and an unidentified probable military area. The new depot consists of nine drive-in adits; four large double-bay storage buildings under construction; a probable missile checkout building in an early stage of construction; 29 barracks/administration buildings; and several construction support buildings. Construction was begun between [redacted] It has progressed slowly over the past four years. 25X1
This facility is in the mid-stage of construction and will probably replace the original facility.

Chronology

14. (S/D) When first observed in February 1969, the road pattern in the munitions handling and storage area (main) was in an early stage of construction. By September 1971, when it was next observed, 47 buildings with a total roof area of 13,000 square meters were complete and type A STYX crates were observed for the first time, indicating that the facility was operational. In November 1974, most buildings were complete, the propellant Cnd oxidizer buildings had been installed, and type B STYX crates were apparent for the first time. Additionally, a CM unit train was at the RTP (Figure 5). The unit train was composed of two 24-meter passenger-type cars and one 20-meter flatcar. A baggage car and several standard flatcars were also present. Ten STYX crates were on the loading dock near the unit train.

15. (S/D) Between 1974 and 1979, an expansion building program was conducted at the depot. Fifteen new buildings with a total roof area of 4,000 square meters were completed. This represented a 30 percent increase in both roof area and number of buildings. A type C STYX crate was first observed in June 1979 in the CM handling and storage area (Figure 6). This is the only time a type C crate has been seen at Ladong. In August 1979, a unit train composed of two 23-meter passenger-type cars and one 17-meter flatcar was at the RTP (Figure 7). While dimensions of these cars varied from those of the cars seen 1974, the composition of this train was the same as that of the unit train observed in 1974.

16. (S/D) STYX crates have been observed only in the CM handling and storage area and in the RTP. Crates have ranged in number from a low of three when first observed in September 1979 to a high of 30 in December 1975. The average number of crates is 12 at any one time. Most of these are type B STYX crates (Table 2).

APPENDIX

(U) This appendix provides a brief description of the STYX CM system and a tabular listing of South Sea Fleet firing units.

(S/D) The CC-N-1 and CSS-N-2/CSSC-2 STYX are short-range, low-altitude, antishipping naval CMs derived from the Soviet SS-N-2 STYX. Most of the information available on the STYX missile was derived from intelligence on the Soviet SS-N-2.[5] The STYX is an aerodynamic missile with a solid-propellant rocket booster for launch and a liquid-bipropellant rocket for sustained flight. The maximum range varies from 26 nm for the CSS-N-1 to an estimated 49 nm for the CSS-N-2/CSSC-2.[6]

(S/D) The missile is equipped with an active radar seeker for terminal homing guidance. It carries approximately 380 kilograms of high explosives in a blast-effect shaped charge warhead.

(S/D) Inhibited red fuming nitric acid and Tonka 250 are used as oxidizer and propellant in the STYX missile. Both substances are compatible with the metal used in the airframe and are storable within the missile for three to six months. A portion of the oxidizer and propellant remains in the missile at impact (the amount varies depending on the length of flight). Firing doctrine allows for a portion of the propellant to remain within the missile to spread fire upon impact.[5,6]

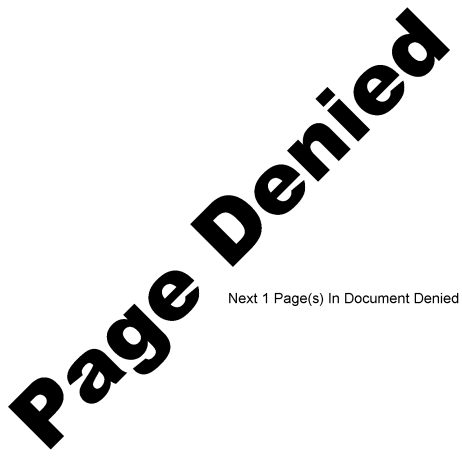

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Table 1.
Ladong Cruise Missile Depot
(Keyed to Figures 1 and 2)
This table in its entirety is classified SECRET/WNINTEL

Item	Description	Dimensions (m) L	W	Floorspace (sq m)	Year Completed
Cruise Missile Fuel Handling Area					
1	Propellant storage				1972
2	Oxidizer storage				1972
Munitions Handling and Storage Area (Primary)					
3	Support				1971
4	Munitions storage				1971
5	Munitions storage				1971
6	Munitions storage (2)				1971
7	Support				1976
8	Munitions support (3)				1971
9	Support				1971
10	Shed				1971
11	Munitions storage (3)				1971
12	Munitions storage (2)				1971
Cruise Missile Handling Storage Area					
13	STYX storage/maintenance (3)				1971
14	Munitions storage				1971
15	Administration support				1971
16	Support				1971
17	Latrine				1971
18	Administration support				1971
19	Munitions support (2)				1971
Administration and Support Area					
20	Barracks/administration				1971
21	Barracks				1971
22	Guardhouse				1971
23	Latrine				1971
24	Support				1971
25	Support				1971
26	Administration support				1971
27	Administration support				1971
28	Administration support				1971
29	Administration support				1971
30	Messhall/auditorium				1971
31	Barracks (8)				1971
32	Barracks (4)				1971
33	Messhall				1971
34	Latrine				1971
35	Livestock support				1971
36	Livestock barn				1971
Munitions Handling and Storage Area (Secondary					
37	Support				1971
38	Support				1971
39	Munitions storage (3)				1971
Rail-to-Road Transfer Point					
40	Warehouse				1979
41	Transshipment bldg				1972

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(S) The CSS-N-1 (short STYX) is used by China on Kianghu, Riga, and Gordyy frigates and on Osa and Hoku missile attack boats. The CSS-N-2 is used on the Luta destroyer, the only vessel that carries the longer missile. The CSSC-2 STYX, a coastal defense version, which is probably identical to the shipborne CSS-N-2, is used at coastal defense CM sites and by mobile CM units. A tabular listing of the South Sea Fleet STYX firing units follows:[7]

CSS-N-1	1 Kianghu frigate (4 launchers each)	4 launchers
	4 Riga frigates (4 launchers each)	16 launchers
	27 Osa missile attack boats (4 launchers each)	108 launchers
	19 Hoku missile attack boats (2 launchers each)	38 launchers
CSS-N-2	2 Luta destroyers (6 launchers each)	12 launchers
CSS-C-2	4 CM sites under construction	
	(1 confirmed and 3 probable—4 launchers each)	16 launchers
	Total	194 launchers

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Table 2.
STYX Crate Order of Battle 1969-1979
This table in its entirety is classified SECRET/WNINTEL

Date Observed	Type A	B	C	Undet
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	--	--	--	--
	3	--	--	--
	--	--	--	--
	--	--	--	3
	--	--	--	--
	--	--	--	6
	--	16	--	--
	14	5	--	--
	20	3	--	--
	--	13	--	--
	7	8	--	--
	5	3	--	--
	6	4	--	--
	--	12	--	--
	3	9	--	--
	1	10	1	--
	4	9	--	--
	4	9	--	--

REFERENCES

IMAGERY

(S/D) All relevant satellite imagery acquired from [redacted] was used in the preparation of this report. 25X1

MAPS OR CHARTS

SAC. US Air Target Chart, Series 200, Sheet 0497-23, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

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7. DIA-1200-107-78, *Naval Order-of-Battle (NOB), People's Republic of China and Eastern Asia (U),* Vol VII, Aug 78 (SECRET [redacted] 25X1 25X1

REQUIREMENT

COMIREX J01
Project 200037DJ 25X1

(S) Comments and queries regarding this report are welcome. They may be directed to [redacted] 25X1
[redacted] Asian Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1

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